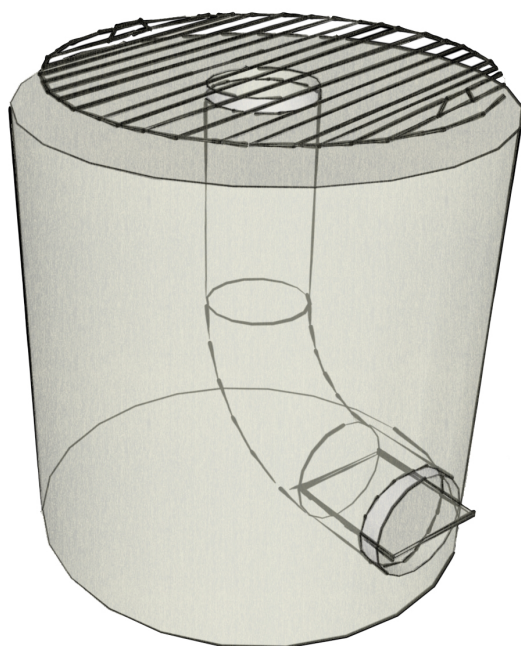


A ROOT SIMPLE TECHNICAL BULLETIN

Make a Portable Rocket Stove

Ref: RS SIP1-1-12



Materials:

1 five-gallon metal paint can with lid
1 foot of 4" metal vent pipe
1 metal 90° vent pipe elbow
13" round barbeque grill
A tin can

Insulation:

5 gallons vermiculite, approx. (find it at nurseries/home improvement centers)
and about 1/2 gallon of clay slip or clay soil
-or-
5 gallons of wood ash

Tin snips and/or jig saw

1. Cut a 4" hole in the center of the lid of the metal can. This will be the hole the vent pipe will exit from to create the burner for your rocket stove. 2. Use the elbow and two short pieces of vent pipe to make an "L" shaped vent--the heart of your rocket stove. Note that when you buy vent pipe, one end is corrugated and slightly narrower. Cut a 3" piece from the corrugated end. Use the rest of the pipe to cut your 7 1/4" section. 3. Fit the 3" piece into the 90° elbow. Fit the elbow into the 7 1/4" piece. 4. Lower the L shaped assembly into the bucket and mark where the bottom of the elbow will exit the bottom of the can. The bottom edge of the vent pipe, where it exits the can, should be around an inch off the bottom of the can. The top of the vent pipe should fall above the lid of the can but below the rim. This way there will be some space between the grill, which rests on the rim, and the top of the pipe. 5. Cut out a 4" hole for the bottom exit of the vent pipe. Check the fit of the vent pipe top and bottom with the lid in place. If it fits, leave the vent pipe in the can but remove the lid. 6. Mix six parts vermiculite with one part clay slip or clay soil from your yard. (If your area has clay it will be found below the organic layer of soil, probably around a foot down.) Mix the clay, vermiculite and just enough water to dissolve the clay. This mixture will provide insulation to make your rocket stove efficient. Do not use plain soil--what you need is

insulation, i.e. something with pockets of air in it. The vermiculite provides this quality. The clay binds it together. Alternately, you could just use plain, dry wood ash--no clay is necessary with ash. With the vent pipe in place, pack the clay-vermiculite mixture or ash into the can. 7. Take off both ends of a tin can (a 28 ounce tomato can works great). Flatten the can and use your tin snips to cut a piece that will serve as a shelf in the lower vent exit. The shelf should bisect the 4" vent and go approximately 4 inches back, into the 90° elbow. This shelf will hold the small twigs you burn in the stove and allow oxygen to enter the pipe underneath the shelf. 8. If you used the vermiculite/clay mixture, leave the lid off the stove to allow the clay to dry for a few days. 9. Put the lid and barbeque grill on the stove. To use the stove, put some kindling or newspaper into the lower vent exit underneath the tin can shelf. Put twigs on top of the shelf and light the newspaper or kindling on fire. Build up the fire with thin twigs, pencil-sized and smaller work best at the start. You will need to keep feeding sticks into the pipe constantly to keep the fire going. Rocket stoves are best for fast cooking, like boiling and frying. For slow cooking, bring a pot to a boil, then move to an insulated box to finish--see RS HAY1-11/11.